

REMARKS

This application has been amended in a manner that is believed to place it in condition for allowance at the time of the next Official Action.

Claims 7-12 and 17-27 are pending in the application. Claims 7-12 have been amended to address formal matters. New claims 17-27 have been added. Support for new claims 17-27 may be found generally throughout the specification and in the original claims.

In the outstanding Official Action, claims 7-12 were rejected under 35 USC §112, first paragraph, as allegedly not satisfying the enablement requirement. This rejection is traversed.

The present invention relates to the use of biocatalytic fuel cells. The fuel cells of the claimed invention are biologically catalyzed (enzyme) and operate in liquid phase. The inventors have noticed that periodic loads improve the operation and output of the fuel cells. This is believed to be due to the improved mass transfer in the anode and cathode.

However, the connection of cells, especially in series, has the same problems as that of any energy cell. Cells should be in an equal state in order to function properly. This can be avoided with the present method by using, for example, connections shown in in Figures 1 and 2 of the application.

In a parallel connection (Fig. 1), the voltage is not increased before the DC/DC converter. However, cells do exhibit a periodic load. They are connected one by one to the capacitor. A cycle can be based according to the time, or it can be based on the voltage measurement. In this regard, the cell with the highest voltage is always chosen.

In a serial connection (Fig. 2), voltage can be increased by a virtual serial connection via additional energy storages. Accordingly, the problematic aspects of galvanic serial connections of fuel cells can be avoided. Cells are periodically connected to cell-specific energy storages and then these storages are connected in series to power the converter or the load. In this connection, the switches are typically operated periodically at certain intervals.

Thus, the present invention is based on the unexpected properties of biocatalytic fuel cells. The output voltage of such a fuel cell increases as the load is periodically switched on and off.

In view of the above, applicants respectfully submit that the outstanding Official Action fails to satisfy its burden in showing that the claimed invention is not enabled. The Official Action cites to SHIOYA in support of its position. However, in view of the above, it is believed to be apparent that SHIOYA fails to show that the claimed invention does not satisfy the enablement requirement. Indeed, while SHIOYA may disclose a

particular method, SHIOYA does not cast doubt as to whether the claimed invention is enabled.

In this regard, the Examiner is respectfully reminded that it is a well-founded principle that any assertion by the Patent Office that the enabling disclosure is not commensurate in scope with the protection sought must be supported by evidence or reasoning substantiating the doubt so expressed.

As a matter of law, the expressed teaching of the patent specification cannot be controverted by mere speculation and unsupported assertions on the part of the Patent Office. As stated by the Court of Customs and Patent Appeals in the case of *In re Dinh-Nguyen and Stanhagen*, 181 USPQ 46 (CCPA 1974):

Any assertion by the Patent Office that the enabling disclosure is not commensurate in scope with the protection sought must be supported by evidence or reasoning substantiating the doubt so expressed. 181 USPQ at 47.

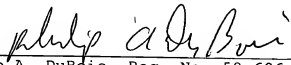
Such a standard must be applied with great care when the Examiner's conjecture is contrary to the teachings of the specification.

In view of the above, applicants respectfully submit that the Official Action fails to satisfy its burden in showing that the claimed invention does not satisfy the enablement requirement. Accordingly, applicants believe that the present application is in condition for allowance at the time of the next Official Action.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

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